

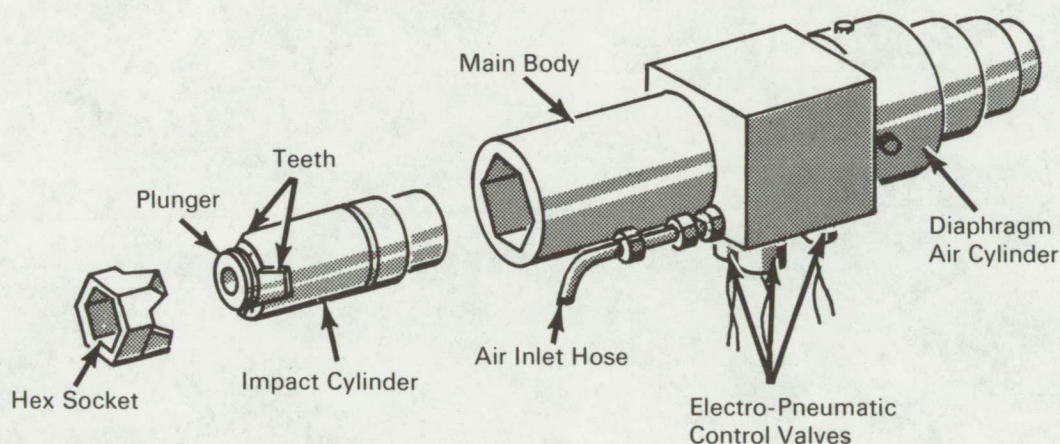


AEC-NASA TECH BRIEF



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Pneumatic Wrench Retains or Discharges Nuts or Bolts as Desired



The problem:

To design a wrench which can retain or discharge a nut or bolt as desired. In disassembly operations, it is often necessary to be able to remove a nut or bolt completely with a pneumatic wrench and then discharge the nut or bolt from the wrench into a common receptacle. It is especially important to do this in the removing of nuts and bolts in the vertical position since a slip could mean dropping the material into hard-to-reach locations.

The solution:

A pneumatic wrench that grips, screws or unscrews, and discharges the nut or bolt as desired.

How it's done:

The device consists of a standard pneumatic wrench modified with a special hex bolt head socket assembly and a diaphragm air cylinder. The diaphragm air

cylinder allows the special socket assembly to travel axially with respect to the pneumatic wrench body as the nut or bolt is backed off. The special socket assembly can grip the bolt head or discharge the bolt as desired. The gripping feature in the special socket assembly is pneumatically operated.

To operate the wrench, a hex head is inserted into the hex socket. Air pressure is applied through the holes in the socket assembly behind the impact cylinder forcing the impact cylinder forward. The grooves of the cylinder make a fit with the hex bolt head and the teeth of the cylinder and hex socket begin to mesh. As the cylinder moves forward the teeth mesh further forcing a slight rotation of the hex head within the hex socket which effectively retains the hex head. Upon release of air pressure the depressed plunger effectively forces the hex head out of the hex socket.

(continued overleaf)

Notes:

1. A wrench can be equipped with a complete set of different size hex socket assemblies that are interchangeable.
2. Inquiries concerning this innovation may be directed to;

Technology Utilization Officer
AEC-NASA Space Nuclear Propulsion
Office
U.S. Atomic Energy Commission
Washington, D.C. 20545
Reference: B66-10707

Patent status:

No patent action is contemplated by AEC or NASA.

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